

11  
**CLAIMS**

What is claimed is:

1. A method for making Enhanced Observed Time Difference (E-OTD) measurements with a mobile station, comprising steps of:

receiving from a neighbor base station a Digital Traffic Channel (DTC) time slot that is on the same frequency with a desired Digital Control Channel (DCCH) that is to be measured;

detecting and decoding a Coded Digital Voice Color Code (CDVCC) in the DTC to obtain a DVCC;

verifying that the received signal is a correct signal for receiving a DCCH by comparing the received DVCC with a DVCC that forms a part of a base station neighbor list; and

measuring the E-OTD and associating the DVCC and channel number and hyperband information with the E-OTD measurement to obtain an E-OTD measurement report that is transmitted to a Serving Mobile Location Center (SLMC).

2. A method for making measurements of neighbor base stations with a mobile station, comprising steps of:

receiving a measurement list of neighbor base stations, the list including information for identifying at least one neighbor base station that transmits a frequency channel to be measured;

tuning to a frequency channel transmitted by the neighbor base station, the frequency channel containing a control channel used for making a measurement;

verifying that the frequency channel is a correct frequency channel transmitted by the neighbor base station to be measured by receiving a traffic channel that is on the same frequency channel and extracting from

TOPT-9605660

the received traffic channel certain information that can be used to identify the base station that transmits the traffic channel;

comparing the extracted information with the information for identifying the neighbor base station that was received in the measurement list to ensure that the correct frequency channel is being received; and

associating the extracted information with the result of the measurement.

3. A method as in claim 2, wherein the measurement is an Enhanced Observed Time Difference (E-OTD) measurement.

4. A method as in claim 2, wherein the information is comprised of a Digital Voice Color Code (DVCC), and where the step of extracting includes a step of decoding a Coded Digital Voice Color Code (CDVCC) field that comprises a part of a Digital Traffic Channel (DTC) that is in the same RF channel with a Digital Control Channel (DCCH) used for the measurement.

5. A method as in claim 1, wherein the measurement is an Enhanced Observed Time Difference (E-OTD) measurement, wherein the information is comprised of a Digital Voice Color Code (DVCC), and where the step of extracting includes a step of decoding a Coded Digital Voice Color Code (CDVCC) field that comprises a part of a Digital Traffic Channel (DTC) that is in the same RF channel with a Digital Control Channel (DCCH) used for the E-OTD measurement, and wherein the step of associating includes a channel number, a hyperband, and the DVCC with the result of the E-OTD measurement that is reported to a wireless network from the mobile station.

6. A mobile station comprising an RF transceiver having an RF transmitter and an RF receiver, said mobile station further comprising a controller coupled to the RF transceiver and being programmed for making measurements of neighbor base stations, said controller being programmed to (a) receive a measurement list of neighbor base stations from a serving base station, the list containing information for identifying at least one neighbor base station that transmits a frequency channel; (b) to tune said RF receiver to a frequency channel transmitted by the neighbor base station, the frequency channel containing a control channel used for making a measurement; (c) to verify that the frequency channel is a correct frequency channel transmitted by the neighbor

base station to be measured by receiving a traffic channel that is on the same frequency channel and by extracting from the received traffic channel certain information that can be used to identify the base station that transmits the traffic channel; (d) to compare the extracted information with the information for identifying the at least one neighbor base station that was received in the measurement list to ensure that the correct frequency channel is being received; and (e) to associate the extracted information with the result of a measurement.

7. A mobile station as in claim 6, wherein the measurement is an Enhanced Observed Time Difference (E-OTD) measurement.

8. A mobile station as in claim 6, wherein the information is comprised of a Digital Voice Color Code (DVCC), and where said controller, when extracting said certain information, decodes a Coded Digital Voice Color Code (CDVCC) field that comprises a part of a Digital Traffic Channel (DTC) that is in the same RF channel with a Digital Control Channel (DCCH) used for the measurement.

9. A mobile station as in claim 6, wherein the measurement is an Enhanced Observed Time Difference (E-OTD) measurement, wherein the information is comprised of a Digital Voice Color Code (DVCC), and where said controller, when extracting said certain information, decodes a Coded Digital Voice Color Code (CDVCC) field that comprises a part of a Digital Traffic Channel (DTC) that is in the same RF channel with a Digital Control Channel (DCCH) used for the E-OTD measurement, and where said controller, when associating the extracted information with the result of a measurement, includes a channel number, a hyperband and the DVCC with the result of the E-OTD, and reports the result of the measurement by transmitting the result through said RF transmitter.